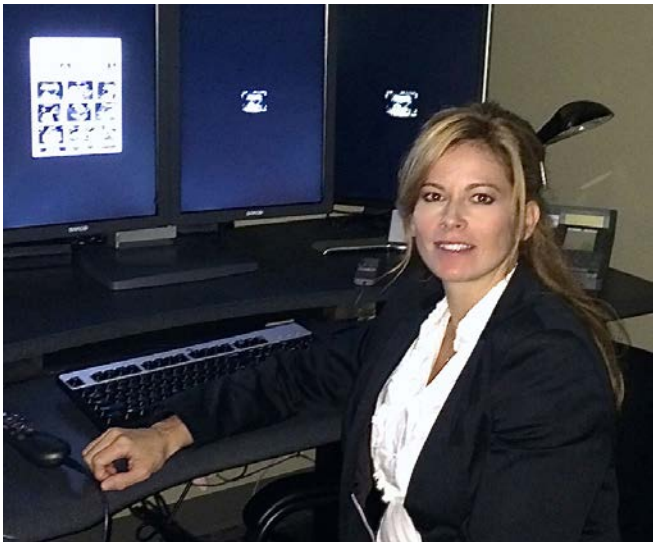
EFW Radiology: Optimizing imaging performance and diagnostic accuracy

with TOSHIBA's Aplio Ultrasound System



Ms. Cindy Wood
Director, Clinical Operations, EFW Radiology

Cindy Wood is the Director of Clinical Operations at EFW Radiology, the proud recipient of the 2014 Consumer Choice Award for Business Excellence in Diagnostic Imaging for Southern Alberta. EFW Radiology was formed in 1969 to provide services at the newly constructed Foothills Medical Centre and teaching at the University of Calgary Medical School. Since then, EFW Radiology has grown, now with more than sixty Radiologists who provide subspecialty focused care in every conceivable aspect of healthcare.

EFW Radiology continues to provide services to the Foothills Medical Centre, and now also to the Tom Baker Cancer Centre, acute care centers in Calgary, Cochrane and Okotoks and the High River Hospital. The partnership also owns and operates nine community based clinics. The largest clinic is the Advanced Medical Imaging Centre which provides a variety of specialized services. More than 600,000 imaging studies, interventional procedures, second opinions and consultations are performed annually.

You are the Director of Clinical Operations at EFW Radiology. Could you tell us a little more about your role?

I am also an ultrasound technologist and I have been in medicine in various roles for over 20 years. I worked as the ultrasound manager for EFW radiology for fourteen years, and was then promoted to my current position three years ago overseeing all modalities. In my current role, I scan and work with the systems in close contact with all of the modalities.

What persuaded you to select TOSHIBA?

We go back with TOSHIBA an incredibly long time. EFW has had a partnership with TOSHIBA for over 12 years. I was the Ultrasound Manager back then, and we have gone through many different systems. Although at the onset we had an ultrasound system from every single vendor, we found a perfect fit with TOSHIBA for a number of reasons.

"We found a perfect fit with TOSHIBA. Their customer service is exemplary compared to the other vendors. TOSHIBA offers cutting edge technology that meets all of our needs. With TOSHIBA, we have a great partnership and benefit greatly from the educational programs they deliver to our team of technologists and radiologists."

TOSHIBA's reliability is second to none. Image quality does not degrade with time which is a quality we appreciate very much. TOSHIBA ultrasound machines are work horses. We have kept many of these units (7-8 years of age) because we can simply upgrade the software and they are so reliable. However of utmost importance is the customer service that we receive. If we have a problem, TOSHIBA is right there, the very same day to ensure we can service our patients and meet their needs. Secondly, we were impressed with TOSHIBA's incredible technology. As ultrasound has progressed through the years, TOSHIBA has been at the forefront of the industry. I am amazed every year with the changes to the platform and to the software. It is on the cutting edge, meeting and often surpassing our needs. TOSHIBA's ultrasound systems provide higher-quality images and consequently have expanded our capabilities to do new exams with increased productivity. At EFW Radiology, "if we can diagnose it with ultrasound - we do it". That is attributable to the leading edge equipment that we have in our clinics. We found a perfect fit with TOSHIBA. Their customer service is exemplary and an example to others.

With TOSHIBA, we have a great partnership and benefit greatly from the educational programs they deliver to our team of technologists and radiologists. We are a teaching facility, so education is extremely important to us. We teach the residents and fellows for the University of Calgary. TOSHIBA has been really involved in facilitating knowledge transfer to both our internal and external stakeholders. TOSHIBA's hands-on learning approach is effective, covering many different applications with ease.

What clinical benefits have been provided to your facility?

The Aplio series from TOSHIBA has allowed EFW Radiology to conduct all general ultrasound imaging, OB/GYN and vascular exams, and to expand its service lines to breast, musculoskeletal and pediatric imaging. We also do pain therapy using Ultrasound guided injections. We are very sub-specialized in our approach and the expectation from our physician and technologist network is to provide them with access to high quality ultrasound systems that are intuitive to use and can be customized to the user's preference. The ultrasound systems from TOSHIBA consistently provide very high quality images that have enabled our clinic to expand its clinical capabilities.

For example, we have specialized clinics that focus on maternal fetal medicine with our team of perinatologists. Our referring physicians will send us high level, high risk pregnancies from across BC, Saskatchewan and southern Alberta. We manage those cases successfully through ultrasound findings. Momentum with MSK in our clinic is also growing. Our team of MSK sub-specialized radiologists are practicing a new technique called PRP (Plasma Rich Platelet) for pain. Plasma from the patient's blood is collected which is rich in growth factors. We know from laboratory studies that PRP can help increase certain growth factors that are important in the healing process. Currently, investigations are underway to determine if PRP is more helpful than other treatments for chronic tendonitis. We utilize a process whereby we inject the plasma into the area of pain and we are having good success. PRP

TOSHIBA's Aplio Series Ultrasound System is installed at EFW Radiology, providing comprehensive interventional imaging services in Calgary and the surrounding areas.

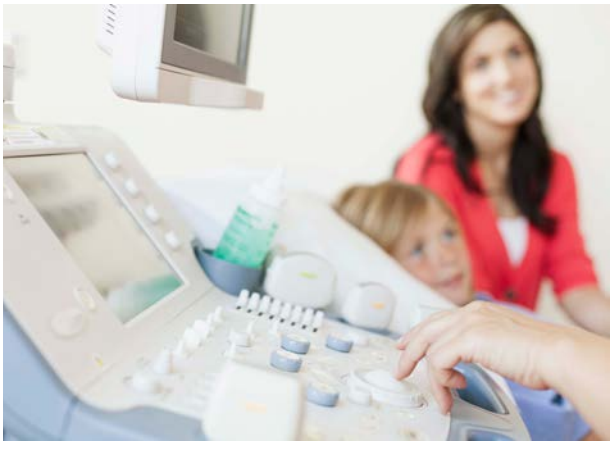
injections involve withdrawing the blood, spinning the blood in the centrifuge, and injecting the PRP into the injured area. Finding a physician who provides PRP injections can be a challenge, but we are able to offer this through our clinic for the care of chronic sports injuries. Having the latest ultrasound technology from TOSHIBA has enabled us to introduce these capabilities with confidence.

Another innovative offering is our HCC (Hepatocellular Cancer) screening program. HCC currently has the fifth highest incidence rate among tumors worldwide, a rate expected to continue to increase over the next several decades. The majority of patients with HCC have cirrhosis of the liver, with chronic hepatitis B and C as the major agents of etiology. Despite advances in technology, the prognosis of patients with HCC has shown little improvement over time, most likely because most patients are diagnosed at advanced stages. HCC meets the criteria established by the World Health Organization for performing surveillance in those at risk for developing this tumor (i.e., patients with cirrhosis of the liver). The objective of surveillance is to use a relatively simple and inexpensive examination to determine whether or not patients are likely to develop cancer, with the overall goal of reducing morbidity and mortality from the cancer. Every three to six months depending on the patient's history and findings, we scan them to ensure that they have not developed liver cancer. The MFM (Maternal Fetal Medicine) Center that we manage is also very unique. We only use TOSHIBA equipment in this facility. Our MFM specialists have training in obstetric ultrasound, invasive prenatal diagnosis using amniocentesis and chorionic villus sampling, and the management of high-risk pregnancies.

Another unique program that we offer is our echocardiography specialist center, proficient in trans-thoracic echo, trans-oesophageal echo and stress echo. All trans-thoracic and stress echocardiograms are done on-site. With regards to pediatric cardiology cases, many of our cardiac surgeons have remarked that TOSHIBA's ultrasound capabilities with Fetal echocardiography are superior. Our Cardiologists have remarked that they have never seen imaging to equal that coming out of EFW. This is a result of both the superior equipment and our well trained sonographers, which go hand in hand. TOSHIBA's applications team have played an important role in building this very high standard, helping to refine this skill set with our sonographers.

Lastly, another key milestone for EFW is the launch of our AWBUS (Automated Whole Breast Ultrasound) Clinic. The only program of its kind offered in Western Canada, this is a screening program for women with dense breasts. More than 40 percent of all women have dense breast tissue. For women with dense breasts AWBUS is a supplementary ultrasound examination of both breasts that can find small cancers that mammography may miss. Studies show that ultrasound and mammography performed together can find more cancers in women with dense breasts than mammography alone. It's important to note that AWBUS is not a substitute for mammography, which remains the foundation of breast cancer screening. This procedure is now available at EFW to help provide early detection of cancers in women with dense breast tissue. This automated exam collects 3,000 to 5,000 images that the radiologist is able to view in a motion-picture format. The radiologist can then speed up, slow down, go forward or backward to review areas of interest. Studies are interpreted by our radiologists, who have had special training in this procedure.

We develop and implement these programs because we see a need in the community, and we are community based. Everything we do, we do because of our staff, and the technology that we are able to access. We are extremely proud of what we do at EFW, and very passionate about the level of service that we can provide to our patients and referring physicians, which is so positively impacted by both the technology and the educational expertise that we have received from our imaging partners like TOSHIBA.



What are your expectations of vendors supplying diagnostic imaging equipment?

My first concern is customer service. I learned a great lesson at the very beginning of my career – customer service is the most important attribute to look for in a vendor. Image quality is a close second because you rely on the applications specialists and service engineers to maintain the system's

functionality and capability, to consistently deliver quality images. To assess image quality, we do side-by-side demonstrations, looking at everything from general ultrasound to specialized exams.

Third in importance when selecting a vendor, is innovation, creativity and the ability to keep up with technology. We have expectations to go above and beyond current technology, so we don't consider a machine that just maintains the status quo. We look at companies that are innovative and creative, and offer new things because that is what our organization is all about.

Of least importance is price, but it still plays a role. Customer service, image quality, and innovation are paramount.

What in your mind differentiates TOSHIBA?

What differentiates TOSHIBA is their people. Everybody is easy to deal with and they are extremely knowledgeable in their field. If we have a problem or question, it is solved very quickly. TOSHIBA's team is organized and focused on our needs, quickly responding to any questions that have arisen during the purchase and installation process and on an ongoing basis. We often send TOSHIBA inquiries because we are thinking of embarking on a new clinical pathway and we don't know if it is even possible. TOSHIBA's staff will then take the question back to their global engineering network, demonstrating a high level of collaboration and commitment to our partnership.

The technology is wonderful, and if it was not there we would not be involved with the company. However it is the people that make the biggest difference.

What do you believe is the biggest challenge for companies developing ultrasound systems for the future?

The sheer number of ultrasound companies that are out there right now is astounding. Ten years ago the competitive edge existed only between the major companies supplying ultrasound. Now there are many smaller companies, each with their own area of specialization. Some companies have a very narrow focus, for example breast imaging for ultrasound, whereas companies such as TOSHIBA, offer a broad range of applications. Ultrasound continues to grow rapidly in specific clinical areas. One key area is MSK imaging. Consequently we now see manufacturers that specialize in one core area and they are very good at what they do. The biggest challenge in the industry will be to keep up with developmental technologies in all aspects of ultrasound imaging, taking into account obstetrics, breast imaging, abdominal imaging, and even bowel imaging.

What is your personal vision in terms of where ultrasound imaging technology is likely to go in the next ten years?

Within the field of obstetrics, ultrasound provides the best imaging solution. It is constantly getting better in terms of its contribution to the diagnosis of fetal diseases. The same can be said with respect to the field of MSK imaging and Echocardiography. Ultrasound will always be an integral part of medicine. Ultrasound technology keeps improving. I have seen it progress to the level where it supersedes CT and MRI as the modality of choice in many situations. Ultrasound is an inexpensive, fast way of having a quick look and making a good reliable diagnosis and it is noninvasive which is another important benefit. I predict ultrasound is on the cusp of becoming comparable to the gold standard offered with MRI and CT. For example ultrasound imaging is frequently used to substitute an MRI scan for studies of the shoulder. Our physician liaisons have been integral in educating referring doctors about the importance of ordering shoulder ultrasound exams before an MRI. The waiting list for an MRI is considerable whereas ultrasound offers a quick, reliable test that is inexpensive.

There are a lot of articles that compare ultrasound favorably to MRI, shoulder examinations being cited as a good example. There are also several clinical white papers that compare Automated Whole Breast Ultrasound with MRI, the findings of which indicate that it is very comparable to MRI, and in some cases better. I see the progression of ultrasound as a whole growing as a result of the technology improvements that are being made.

How we can do better?

At EFW, we have expectations to offer a broad band of equipment and services. I recommend that TOSHIBA continues its tradition of staying abreast of technology advancements and retain its high level of flexibility.

Hosting an Ultrasound Symposium to share best practices and increase knowledge on how to apply TOSHIBA's ultrasound equipment in different clinical areas of expertise would benefit users. An educational showcase would appeal to many radiologists and sonographers looking to advance their skills. EFW's radiologists would be pleased to participate.